

# WSCC Perspective on RAS and Operating Procedures

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# ***Remedial Actions***

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- **Special preplanned corrective measures which are initiated following a disturbance to provide for acceptable system performance.**
- **Includes manual and automatic actions.**

# Typical Automatic Remedial Actions include:

- **Generator tripping or equivalent reduction of energy input to the system, controlled**
- **Tripping of interruptible load, DC line ramping, insertion of braking resistors, insertion of series capacitors and controlled opening of interconnections and/or other lines including system islanding.**

# Typical Manual remedial actions include:

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- **Manual tripping of load,**
- **Tripping of generation, etc.**

# Remedial Action Scheme

- A protection system which automatically initiates one or more remedial actions. Also, called Special Protection System.
- Remedial Action Schemes (RAS) are allowed as a way to comply with the *WSCC Reliability Criteria For Transmission System Planning*.

# Performance of a RAS

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- **RAS failure must be proven to be a non-credible event to the WSCC if cascading or collapse is result.**
- **Such RAS reliability determinations are made by the WSCC Remedial Action Scheme Reliability Task Force.**

# Performance Levels of RAS

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- **The Performance Level associated with accidental RAS operation is the more stringent Performance Level of the following:**
  - (1) the disturbance that would correctly initiate RAS operation or
  - (2) the action initiated by the RAS.

# Final Considerations

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- **Operating procedures/agreements must be developed to cover situations where the RAS may be out of service or the facility it is protecting is out of service.**
- **Failure modes are important considerations**
- **Manual remedial actions must consider the abilities of the variety of system operators on shift.**